VOL. 25 NO. 36 September 5, 1975

# Cooperative Economic Insect Report

Issued by
PLANT PROTECTION AND QUARANTINE PROGRAMS
ANIMAL AND PLANT HEALTH INSPECTION SERVICE
U.S.DEPARTMENT OF AGRICULTURE

ANIMAL AND PLANT HEALTH INSPECTION SERVICE
PLANT PROTECTION AND QUARANTINE PROGRAMS
NEW PEST DETECTION AND SURVEY STAFF

The Cooperative Economic Insect Report is issued weekly as a service to American Agriculture. Its contents are compiled from information supplied by cooperating State, Federal, and industrial entomologists and other agricultural workers. In releasing this material the Service serves as a clearing house and does not assume responsibility for accuracy of the material.

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Volume 25 September 5, 1975 Number 36

# COOPERATIVE ECONOMIC INSECT REPORT

## HIGHLIGHTS

### Current Conditions

CORN EARWORM heavy on sorghum in parts of Texas and Kansas and economic on soybeans in North Carolina. (p. 735).

EUROPEAN CORN BORER infestations 35 percent and over on corn in Kentucky and South Dakota. (pp. 736-737).

FALL ARMYWORM economic on sorghum and other grasses in parts of Alabama, Florida, South Carolina, North Carolina, and on sweet corn in Wisconsin. (pp. 737-738).

VELVETBEAN CATERPILLAR economic on soybeans in Florida, Alabama, and North Carolina. (p. 739). CABBAGE LOOPER severe on soybeans and vegetables in Virginia. (pp. 739, 742-743). MEXICAN BEAN BEETLE damaged soybeans in Alabama. (p. 740).

BOLL WEEVIL damage in Texas, Oklahoma, and Tennessee. (pp. 740-741).

### Detection

- One male ORIENTAL FRUIT FLY detected at National City, California. (p. 747).
- A DELPHACID PLANTHOPPER in California is a new United States record. First collected in 1933. (p. 749).

New State records include a BRACONID WASP in New Mexico and EUROPEAN EARWIG in Indiana (p. 746) and a POMPILID WASP in Hawaii (p. 748).

For new county records, see page 749.

Reports in this issue are for the week ending August 29 unless otherwise indicated.

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WEATHER OF THE WEEK ENDING AUGUST 31

Reprinted from Weekly Weather and Crop Bulletin supplied by National Weather Service, NOAA.

HIGHLIGHTS: Cooler temperatures and heavy rains descended on the Nation's midsection bringing welcome relief to many dry areas and added problems to some wet areas. Heavy rains, cooler temperatures, and sometimes damaging winds were associated with the passage of two frontal systems during the week. Heavy rains reached New England over the weekend. Except for steady general rains in the Pacific Northwest, clear skies favored areas west of the Rockies.

PRECIPITATION AND TEMPERATURE: A vigorous cold front, pushing cooler air into the heat-stricken northern Plains and Midwest set the stage for a rainy week across the eastern half of the Nation. Dividing the Nation's weather, the system ran from western Great Lakes area to southeast New Mexico. Across the Midwest it generated numerous thundershowers that caused some damage. Meantime, a stationary front along the northern edge of the showers and storms kept New England sunny. Thunderstorms in the southern half of the Plains on Monday produced locally heavy rains that led to flash floods in west-central Missouri and southeast Kansas. Several tornadoes associated with a line of thunderstorms extending from western Wisconsin into southeast Nebraska touched down in Wisconsin and Iowa causing some injuries and damage. In the West, fair skies favored areas from the southern and central Rockies through the Great Basin into California and Oregon. Cloudy skies and rain held Monday's mercury in the 70's and low 80's over much of the Nation's midsection and in the 50's in some mountain spots. The Plains temperatures dropped about 20 degrees from the weekend. Rains finally came to the central Plains, for some crops it was too late. Tuesday morning precipitation

Weather of the week continued on page 752.

## SPECIAL INSECTS OF REGIONAL SIGNIFICANCE

BEET LEAFHOPPER (Circulifer tenellus) - CALIFORNIA - Curly top disease averaged 20-40 percent in 3,100 acres of sugar beets in Antelope Valley, Los Angeles County, but one of best sugar beet crops predicted. Beets surrounded by about 27,000 acres of summer weed hosts with 1-10 hoppers per sweep. Counts very light in sugar beets due to recent controls directed toward Spodoptera exigua (beet armyworm). (Cal. Coop. Rpt.). UTAH - Curly top disease severe in tomatoes and damaged sugar beets in Emery County. Destroyed 90 percent of Washington County tomato plants. (Bond et al.).

CORN EARWORM (Heliothis zea) - OKLAHOMA - Up to 2 per grain sorghum head in west-central counties but light in most fields. Infested corn ears in Texas County and peanuts in Hughes County. Light on sorghum heads in southwest counties. (Okla. Coop. Sur.). TEXAS - Moderate to heavy on sorghum in Rolling Plains. (Boring). KANSAS - Some larval infestations in sorghum heads in southeast district week ending August 15; some treatments applied. Heavy in preboot sorghum in Douglas County, 80 percent of whorls infested. (Bell). MISSOURI - Light to moderate on late sorghum in southwest area. Larvae 3-44 per 100 heads. Larvae in first and second instars and nearly full grown. (Munson). WISCONSIN - Adults 5 or more on 3 consecutive nights at several blacklight trapping sites; nearly all trapping sites yielded some moths. Small larvae in some southern sweet corn, and 0.75-grown larva collected in Columbia County. (Wis. Ins. Sur.).

FLORIDA - Corn earworm on increase in soybeans but still below economic threshold in Jackson County. (Fla. Coop. Sur.). ALABAMA - Corn earworm larvae, 2-5, and Celama sorghiella (sorghum webworm) up to 30, per grain sorghum head, destroyed 75 percent of 100-acre field in Marengo County. (Yates). TENNESSEE - Potential problem in beans if weather continues hot and dry. Cotton and corn unattractive to moths in most areas. (Gordon, Bruer). NORTH CAROLINA - Pupation underway on soybeans in southern half of State. Larvae peaked in Coastal Plain and will have declined below threshold in most fields by September 12. Larvae at threshold level, one per foot of row, in 10 of 25 soybean fields randomly selected in Sampson, Duplin, Johnston, Greene, Pitt, Halifax, and Northampton Counties. Economic numbers in about 50 percent of open canopy fields. Large larvae 15-20 per 6-foot sample common. Some defoliation in peanuts; few fields needed treating to date for control and larval counts declined in most areas. Drought critical in many fields. (Hunt, Robertson).

VIRGINIA - Corn earworm larvae appeared on soybeans in Isle of Wight, Westmoreland, Charles City, James City, and Lancaster Counties. Exceeded threshold in 5 of 16 fields in Isle of Wight County; 3 fields treated. Sprays applied in Greenville and Southampton Counties. (Allen). MARYLAND - Adult catches in blacklight traps less than 1-2 per night except in St. Marys County, 6-20 per night. Larvae light to moderate in field and sweet corn; rarely exceeding 15 percent injury levels. Egg laying in snap beans, limas, and soybeans expected to increase next 10 days. Effects of heavy rain in July evident in lateness of buildup week ending August 22. (U. Md., Ent. Dept.).

GREENBUG (Schizaphis graminum) - TEXAS - Light to heavy on sorghum in Rolling Plains and San Angelo area. Almost nonexistent in Hale County. (Boring et al.). OKLAHOMA - Heavy on sorghum in Harmon County. (Okla. Coop. Sur.). NEBRASKA - Parasitism by Lysiphlebus testaceipes (a braconid wasp) at or near 100 percent statewide. (Raun, Campbell).

PICKLEWORM (Diaphania nitidalis) - SOUTH CAROLINA - Larvae continued extensive damage to garden squash and cucumbers in Oconee, Pickens, and Anderson Counties week ending August 22. (McCaskill).

POTATO LEAFHOPPER (Empoasca fabae) - DELAWARE - Moderate, 20-30 per sweep, in several fields of lima beans in Kent and Sussex Counties. (Burbutis). OHIO - Started decline on alfalfa week ending August 22. Adult averages per sweep by county: Clinton 0.6 on third cutting, Brown 0.3, and Pickaway 0.4. Damage light in fields surveyed. Current averages per sweep of alfalfa by county: Delaware 0.6, Morrow 0.2, Crawford 0.3, Knox 0.4, and Licking 0.5. Very few nymphs. (Lewis). WISCONSIN - Generally light in most fields, from about one per sweep in short regrowth fields to 15 per sweep on alfalfa in preferred early blossom stage. Counts of 8-15 per sweep in mature second-growth alfalfa in Barron, Eau Claire, and La Crosse Counties. Ranged 1-2 per sweep in dry beans and lima beans in Trempealeau and Dunn Counties. Rarely exceeded one per sweep in snap beans and potatoes in central district. (Wis. Ins. Sur.).

SPOTTED ALFALFA APHID (Therioaphis maculata) - OKLAHOMA - Averaged 500 per 10 sweeps of alfalfa in Cimarron County. (Okla. Coop. Sur.). NEVADA - Ranged 70-150 per sweep on 450 acres of seed alfalfa and 250 per sweep on 50 acres of young hay alfalfa in Lower Valley at Lovelock, Pershing County; treatments applied. One other hay field and one seed field averaged 30 and 50 aphids per sweep, respectively; no treatment. Defoliation in progress. Less than 2 per sweep on hay and seed fields in Central Valley and Upper Valley. Occasional specimen on hay alfalfa in Buena Vista Valley, Pershing County. (Barclay et al.).

**CORN, SORGHUM, SUGARCANE**

EUROPEAN CORN BORER (Ostrinia nubilalis) - MAINE - Continued heavier than in 1974 on sweet corn week of August 25. (Gall). OHIO - Infested 0-32 percent of field corn in central and north-central counties. Average percent infestation by county: Delaware 7, Marion 12, Knox 2, Crawford 0, and Richland 20. Larvae 1-8 (averaged 1.7) per infested plant for all counties. Mostly late instars, averaged about one inch long. (Lewis). Second instars infested 10 percent of sweet corn ears in 5 acres in Portage County. Ear damage slight. (Custer). KENTUCKY - Percent corn infested (and larvae per 100 plants) by county: Graves 36.0 (27.6), Christian 56.8 (33.6), Hopkins 51.6 (51.4), Todd 58.4 (47.6), Logan 69.6 (50.8), Simpson 46.0 (29.0), Warren 47.2 (17.6). (Barnett et al.).

ILLINOIS - First-generation European corn borer light statewide; averaged 2.2 percent infestation and 1.7 larvae per 100 plants. "Hot spots" in 2 northernmost districts and 2 southernmost districts. Individual counties averaged 9+ larvae per 100 plants. (Ill. Ins. Rpt.). WISCONSIN - Egg laying subsiding in southern areas; egg

masses on 10-15 percent of late field corn and sweet corn. European corn borer eggs on half of plants in some fields in more northerly areas in St. Croix County. First and second instars on virtually all plants and fresh eggs on 15 percent of plants in Trempealeau County field. Most sweet corn treated at least 2 weeks in more advanced areas, but small larvae appeared in ear tips in treated fields. Second-generation larvae in third instar in Marquette, Dane, and Trempealeau Counties. Many female moths bulging with eggs in blacklight traps. (Wis. Ins. Sur.).

SOUTH DAKOTA - European corn borer infested 50-100 percent of stalks in fields checked. (Walgenbach). KANSAS - Second-generation larvae caused 10 percent sorghum head breakage in Edwards County field. Larval averages 2-3 per plant, fed externally behind leaf sheaths. Farthest west for sorghum head breakage in State. Average percentage corn infested by county: Edwards 0-100 (4 fields), Pratt 4, and Hodgeman 20. (Bell).

SOUTHWESTERN CORN BORER (Diatraea grandiosella) - OKLAHOMA - Infested corn ears in Texas County. Damaged ears ranged 10-75 percent with this species, Spodoptera frugiperda (fall armyworm) and Heliothis zea (corn earworm) found. (Okla. Coop. Sur.). KANSAS - Pupae of second generation common in late corn in Stafford County field. Most remaining larvae half to full grown; few newly emerged adults and fresh third-generation eggs. Larvae in Edwards County field, 0.25-inch to full grown, averaged 6.4 per plant; second-generation pupae trace. Infested all plants in both fields. Average percent of dented corn infested by county: Kiowa 24, Edwards 100, Hodgeman 20 and 90 percent (2 fields). (Bell). MISSOURI - Fully grown larvae on 3-26 percent of popcorn plants in southwest area. Girdled less than 2 percent of plants. (Munson).

FALL ARMYWORM (Spodoptera frugiperda) - OKLAHOMA - Ranged 1-3 per grain sorghum head checked in Harmon County. Continued to infest whorls of late-maturing sorghum in west-central and southwest areas. Infested corn ears in Texas County. (Okla Coop. Sur.). ALABAMA - Up to 50 larvae per head of grain sorghum destroyed 100-acre field in Autauga County; 200 other acres with similar infestations treated and saved. Damaged several fields of grain sorghum in Tuscaloosa County. (Kirkpatrick et al.). FLORIDA - Larvae moderately infested buds of 2.5 to 3-foot sweet corn in 50-acre planting at Homestead, Dade County, by August 22. Treatments required. Currently, larvae heavily infested 230 acres of late-planted sorghum near Gretna, Gadsden County. Larvae averaged 2-3 per 6-inch plant. (Fla. Coop. Sur.).

SOUTH CAROLINA - Fall armyworm larvae moderate to very heavy, continued economic damage to sorghum in all except mountainous counties by August 20. Controls difficult. (Griffin). NORTH CAROLINA - Damage to sorghum and turf continued in Robeson, Cleveland, Johnston, and Harnett Counties. About 20 acres of sorghum treated in Johnston County. (Hunt). MARYLAND - Larvae in late-planted silage corn moderate to heavy in Frederick and Carroll County. Counts slightly above normal week ending August 22. (U. Md., Ent. Dept.). NEW JERSEY - Egg masses heavy on some corn in Cape May County. (Ins.-Dis. Newsltr.). WISCONSIN - Infested sweet corn in Outagamie, Brown, Calumet, Manitowoc, Dodge, Dane, and Columbia Counties. Infested up to 50+ percent of plants in some fields and 100 percent of some spots. Most larvae two-thirds grown. Heavy ear damage and up to 3 larvae per ear in some fields. (Wis. Ins. Sur.).

SORGHUM WEBWORM (Celama sorghiella) - MISSOURI - Larvae 15 to 200+ per 100 heads of late-planted sorghum in southwest area. (Munson).

CORN ROOTWORMS (Diabrotica spp.) - UTAH - D. virgifera (western corn rootworm) very heavy in some fields of canning corn in Box Elder County; treatments required. Some injury in Davis County. (Duncan, Stokes). KANSAS - Diabrotica spp. lodging severe in many cornfields in Brown and Doniphan Counties. Serious root damage in one field each in Pratt and Hodgeman Counties. (Bell). NORTH DAKOTA - D. virgifera adults averaged 2.4 per plant in field of grain corn in Sargent County. Lodged 25 percent of field in Richland County. (Scholl).

MINNESOTA - Annual survey completed. Fields had been in corn in 1974. Diabrotica spp. increased in southeast and south-central districts, averaged 53,421 and 40,858 per acre, respectively. Decreased in east-central and southwest districts, averaged 10,874 and 36,680 per acre, respectively. (Minn. Pest Rpt.). WISCONSIN - Storms lodged many fields due to Diabrotica spp. root injury and high winds. Adults still heavy, 8 per plant, in late corn with some green silks. Many Diabrotica spp. adults killed by Ostrinia nubilalis (European corn borer) treatments, but females already laid most of eggs in southern counties. Population increase in 1976 expected with good egg laying conditions and high winter survival. (Wis. Ins. Sur.).

NORTHERN CORN ROOTWORM (Diabrotica longicornis) - OHIO - Adults per 25 corn plants averaged 51 August 19 in Clinton County and 32 in Pickaway County field. Dispersal of adults currently well underway. More rootworm beetles observed in forage (up to 2 per sweep) than in corn. (Lewis). WEST VIRGINIA - D. longicornis adults collected August 27, 1975, on ears of corn at Washington, Wood County, and Millwood, Jackson County. Few adults observed; no damage. Collected and determined by J.D. Hacker. These are new county records. (Hacker).

SORGHUM MIDGE (Contarinia sorghicola) - TEXAS - Moderate to heavy on sorghum in San Angelo area, lighter in Rolling Plains and Lubbock area. (McWhorter et al.). OKLAHOMA - Averaged 8 adults per head in grain sorghum field in Kiowa County, but light in most fields in Kiowa and Jackson Counties. (Okla. Coop. Sur.).

**TURF, PASTURES, RANGELAND**

SOUTHERN MASKED CHAFER (Cyclocephala immaculata) - ILLINOIS - Damage moderate to severe in lawns and golf courses in central area. (Ill. Ins. Rpt.).

FALL ARMYWORM (Spodoptera frugiperda) - FLORIDA - Abundant on pasture grasses in Jackson County. (Fla. Coop. Sur.).

A SCIARID FLY (Bradysia picea) - ALABAMA - Adults continued to emerge from lawns. Nuisance in 25+ counties and north into Lauderdale County. (McQueen).

**FORAGE LEGUMES**

GREEN CLOVERWORM (Plathypena scabra) - WISCONSIN - Heavy in some west-central area alfalfa. Counts of 3-4 per sweep in Eau Claire and La Crosse Counties. (Wis. Ins. Sur.).

PEA LEAF WEEVIL (Sitona lineatus) - IDAHO - Defoliated white clover near Orofino, Clearwater County. Adults active and moving to perennial legumes. (Fitzsimmons, Fisher).

**SOYBEANS**

VELVETBEAN CATERPILLAR (Anticarsia gemmatalis) - FLORIDA - Heavy and generally present on soybeans in Jackson County August 21. (Linker). Larvae averaged 10-12 per foot of row (4-6 economic threshold) of soybeans in Gadsden, Jackson, and Walton Counties. Many larvae small and third generation approached peak. Nomuraea rileyi (a fungus) common in most fields checked and larval expected to affect population soon. Velvetbean caterpillar leveled off in Jackson County. (Fla. Coop. Sur.). ALABAMA - Larvae heavy; damaged several thousand acres of soybeans in Houston, Marengo, Shelby, and other southern counties. Larvae 25 per 3 feet of row in Marengo County. Excessive feeding damage, controls applied, to 40-acre field in Houston County. (Yates et al.). NORTH CAROLINA - Larvae appeared in soybeans, particularly in Washington, Hyde, and Tyrrell Counties. Defoliation critical in many areas because of drought stress. (Hunt, Bradley).

GREEN CLOVERWORM (Plathypena scabra) - ILLINOIS - As high as 20 per foot of row of soybeans in Clark County. (Ill. Ins. Rpt.). IOWA - Larvae ranged 6-19 per row foot in north-central counties. Some treatments where counts of 15 per row foot and soybeans in pod-fill stage. (Iowa Ins. Sur.). WISCONSIN - Up to one per sweep of soybeans in Eau Claire and St. Croix Counties and up to 2 per sweep in southern Trempealeau County field. More than half of larvae under half grown. Many moths appeared in St. Croix County blacklight trap. Most soybeans in area have good pod fill. (Wis. Ins. Sur.).

SOYBEAN LOOPER (Pseudoplusia includens) - FLORIDA - Noneconomic, averaged 3 per foot of row in 2 Gadsden County soybean fields; economic, averaged 6-7 per foot of row in field where kudzu patch on border (field traditionally has more loopers). Insecticides unsatisfactory. (Fla. Coop. Sur.). ALABAMA - Early instars 7 per 30 feet of row in soybean field in Macon County. Leaf feeding light to heavy in many thousands of acres throughout south and central areas. (Gross et al.).

CABBAGE LOOPER (Trichoplusia ni) - VIRGINIA - Moths steadily increased past 14 days in Accomac and Northampton Counties. Severe outbreaks in various crops on entire Eastern Shore. Severe on soybeans. Polyhedrosis virus widespread throughout entire Eastern Shore. (Hofmaster).

BEET ARMYWORM (Spodoptera exigua) - NORTH CAROLINA - Larvae defoliated soybeans over Coastal Plain. Heaviest in Scotland and Robeson Counties with local spot infestations in Halifax County. Several hundred acres treated in Scotland County. Spots to 20 acres treated in Halifax County. (Bradley).

FALL ARMYWORM (Spodoptera frugiperda) - FLORIDA - Larvae 1-2 per foot of row generally present in Gadsden County. Fall armyworm not observed previously on soybeans in area. (Fla. Coop. Sur.).

MEXICAN BEAN BEETLE (Epilachna varivestis) - ALABAMA - Adults and larvae damaged several thousand acres of soybeans in Cherokee, Colbert, and Madison Counties. Controls applied to 2,000+ acres in Cherokee County. Adults and larvae 20-40 per plant. Defoliated 40 percent of 10-acre field in Colbert County. (Hall et al.). MARYLAND - Larvae on Eastern Shore and southern area ranged 2-15 per linear foot of row week of August 22. Damage light to moderate (2-15 percent defoliation). Adults of first generation and first and second instars predominate. Pediobius foveolatus (a eulophid wasp) parasitism increased in all areas. About 70 percent of fields surveyed had parasite activity. (U. Md., Ent. Dept.). INDIANA - Adults of third, and some fourth, generation moved to more recently planted soybean fields. Present north to U.S. Highway 40 except in extreme western edge of State. (Meyer).

BEAN LEAF BEETLE (Cerotoma trifurcata) - MISSISSIPPI - Heaviest on soybeans in south area week of August 22. Ranged 12.0-15.3 per 25 sweeps in Franklin, Lincoln, and Jefferson Davis Counties. Ranged 3.0-8.6 per 25 sweeps in Lawrence, Walthall, and Marion Counties. Very light in Delta counties. Averages by county: Prentiss 0.6, Oktibbeha 8, Carroll 1.75, and Montgomery 2.25. (Robinson).

**PEANUTS**

SOUTHERN CORN ROOTWORM (Diabrotica undecimpunctata howardi) - FLORIDA - Heavy in 7-10 percent of peanuts surveyed in Jackson County August 21. (Linker). ALABAMA - Larvae damaged peanuts in few fields in Houston County. (Stephenson).

REDNECKED PEANUTWORM (Stegasta bosqueella) - OKLAHOMA - Infested peanut terminals averaged 30 percent in Harmon County. Damage light in Hughes County. (Okla. Coop. Sur.).

LESSER CORNSTALK BORER (Elasmopalpus lignosellus) - OKLAHOMA - Heavy on peanuts in Bryan County. (Okla. Coop. Sur.).

**COTTON**

BOLL WEEVIL (Anthonomus grandis) - TEXAS - Light to heavy in Rolling Plains area. Moderate to heavy in San Angelo area. (Boring, McWhorter). OKLAHOMA - Punctured squares up to 100 percent in untreated cotton in Caddo, Washita, Beckham, and Custer Counties; slightly lighter in many treated fields. Averaged 12 percent in Grady County. Up to 47 percent in most treated fields and 85 percent in isolated untreated fields in Jackson, Harmon, Tillman, Greer, and Kiowa Counties. (Okla. Coop. Sur.).

LOUISIANA - Boll weevil increased in infested fields week ending August 26. Continued increase will damage bolls if not controlled. (Tynes). MISSISSIPPI - Punctured-square counts indicate fair to good control statewide week ending August 22; average percentage by county: Copiah 20 percent in 500 acres, Rankin 8 in 6,000 acres,

Scott 14 in 6 fields, Holmes 3 in 600 acres, Lawrence 15 in one field, and Noxubee 10 in 2,000 acres. (Robinson). ALABAMA - Numbers and damage by boll weevil still high on cotton statewide. (Dean et al.). TENNESSEE - Continued very serious damage throughout western area. Punctured squares ranged from 2 to 50 percent in Lake County to 100 percent in southern tier of counties. Scarcity of squares in southern counties; young bolls punctured. Up to 14 adults in Hardeman County blooms. Migration to less infested fields very heavy; controls difficult. Rank cotton hindered ground controls. (Locke, Patrick). Properly applied controls effective in mid-State area. Counts lighter than in western area. Cotton "cutting out" in western counties. (Cagle).

BOLLWORMS (Heliothis spp.) - TEXAS - H. zea (bollworm) light to moderate in Rolling Plains, San Angelo, and Lubbock areas. Moderate to heavy in Hale County. (Boring et al.). OKLAHOMA - Squares damaged by Heliothis spp. ranged 5-15 percent in untreated cotton and up to 40 percent in treated cotton in Caddo, Washita, Beckham, and Custer Counties; H. virescens (tobacco budworm) comprised 70-100 percent of population in treated fields. Damaged squares averaged 22 percent in Grady County. Egg laying increased in Jackson, Harmon, Tillman, Greer, and Kiowa Counties. Eggs ranged 4-32 per 100 terminals, larvae 0-12 per 100 terminals, and damaged squares ranged 0-10 percent. (Okla. Coop. Sur.). LOUISIANA - Egg laying by H. virescens and H. zea still moderate throughout State week ending August 26. Heavier than earlier in northeast area. (Tynes).

ARKANSAS - Percentage of H. virescens in Heliothis population increased: 72.5 compared with 28, 21, and 14, respectively, past 3 weeks. (Boyer). MISSISSIPPI - Controls very difficult in some cotton fields week ending August 22, but generally controls good. Average percentage of larvae by county: Copiah 0-8 percent in 500 acres, Scott 4-9 in 6 fields, Rankin 0-8 in 6,000 acres, and Noxubee 0-3 in 2,000 acres. Eggs increased in Noxubee County, 2-34 percent of terminals infested. (Robinson). TENNESSEE - All larval instars of Heliothis spp. in most cotton fields in southwest counties. Damage heavy; controls very erratic. Larvae below control levels in northwest counties. Properly applied controls effective in central counties. (Locke et al.).

FALL ARMYWORM (Spodoptera frugiperda) - ALABAMA - Economic in squares and bolls in several cotton fields in Russell, Lee, and Autauga Counties; most unusual. (Williams et al.).

COTTON LEAFPERFORATOR (Bucculatrix thurberiella) - CALIFORNIA - Moth activity increased on cotton in Imperial County; controls applied. (Cal. Coop. Rpt.).

BANDEDWING WHITEFLY (Trialeurodes abutilonea) - ALABAMA - Increased statewide. Economic damage in few fields in Cherokee County. (Dean et al.).

COTTON APHID (Aphis gossypii) - OKLAHOMA - Heavy in spots of isolated cotton in southwest counties. (Okla. Coop. Sur.).

**MISCELLANEOUS FIELD CROPS**

CARROT BEETLE (Bothynus gibbosus) - TEXAS - Increased in light traps in most High Plains and Panhandle counties. Sunflowers damaged at Rolling Plains site. (McIntyre, Boring). OKLAHOMA - Light trap counts by county: Tillman 435 and Greer 3,517. (Okla. Coop. Sur.).

SUNFLOWER BEETLE (Zygogramma exclamationis) - TEXAS - Damaged foliage on 70 percent of sunflowers in Rolling Plains area. (Boring).

TWOSPOTTED SPIDER MITE (Tetranychus urticae) - OREGON - Damage heavy in field of hops in Grants Pass, Josephine County. (Berry).

**POTATOES, TOMATOES, PEPPERS**

CABBAGE LOOPER (Trichoplusia ni) - VIRGINIA - Moths steadily increased past 14 days in Accomac and Northampton Counties. Severe outbreaks on various crops on entire Eastern Shore. Severe on peppers, tomatoes, and fall potatoes. Polyhedrosis virus widespread. (Hofmaster).

EUROPEAN CORN BORER (Ostrinia nubilalis) - DELAWARE - First and second instars entered ripe pepper fruits. (Burbutis). MAINE - Responsible for most hole damage in tomatoes this year. (Gall).

FALL ARMYWORM (Spodoptera frugiperda) - DELAWARE - Egg masses 2-3 per 3 pepper plants. (Burbutis).

GREEN PEACH APHID (Myzus persicae) - NEVADA - Averaged 100+ per sweep on 1,280 acres of potatoes in Eden Valley, Humboldt County. (Rowe). COLORADO - Alate forms moved into potato fields in central San Luis Valley. (Nelson). WISCONSIN - Heavy rains and active spraying lessened severity on potatoes in central district. (Wis. Ins. Sur.).

**BEANS AND PEAS**

CABBAGE LOOPER (Trichoplusia ni) - VIRGINIA - Moths steadily increased past 14 days in Accomac and Northampton Counties. Severe outbreaks on various crops on entire Eastern Shore. Severe on snap beans and lima beans. Polyhedrosis virus widespread. (Hofmaster).

YELLOWSTRIPED ARMYWORM (Spodoptera ornithogalli) - DELAWARE - Larvae infested lima bean fields statewide. (Burbutis).

GREEN CLOVERWORM (Plathypena scabra) - WISCONSIN - Larvae less than 3 per row foot of dry beans in Trempealeau and Dunn Counties; except in one Dunn County field where counts averaged 5 per row foot with maximum of 8 per row foot in parts of field. (Wis. Ins. Sur.).

## COLE CROPS

CABBAGE LOOPER (Trichoplusia ni) - VIRGINIA - Moths steadily increased past 14 days in Accomac and Northampton Counties. Severe outbreaks on various crops on entire Eastern Shore. Severe on all cole crops. Untreated broccoli at Painter averaged approximately 30 larvae per plant. Polyhedrosis virus widespread throughout entire Eastern Shore. (Hofmaster). MARYLAND - Larvae heavy on cabbage and broccoli on Eastern Shore. Ranged 3-4 larvae per plant in unsprayed fields week ending August 22. (U. Md., Ent. Dept.). WISCONSIN - Mostly large larvae 1-3 per head in fields checked in Racine, Kenosha, Columbia, and Outagamie Counties. Heavy flight next 14-21 days. Moth catches in pheromone traps for week ending August 25 by county: Columbia 9, Outagamie 118 in north and 18 in south, Racine 9. Counts down more than half from previous week; increase expected in 7-14 days. (Wis. Ins. Sur.).

IMPORTED CABBAGEWORM (Pieris rapae) - WISCONSIN - Late instars, chrysalids, and adults dominant stages in Columbia County. All larval sizes in most cabbage areas averaged 1-2 per head. (Wis. Ins. Sur.).

## CUCURBITS

CABBAGE LOOPER (Trichoplusia ni) - VIRGINIA - Moths steadily increased past 14 days in Accomac and Northampton Counties. Severe outbreaks on various crops on entire Eastern Shore. Severe on cucumbers. Polyhedrosis virus widespread throughout entire Eastern Shore. (Hofmaster).

## GENERAL VEGETABLES

SWEETPOTATO WEEVIL (Cylas formicarius elegantulus) - FLORIDA - Heavily damaged some fields of Cuban sweetpotato at Homestead, Dade County. (Fla. Coop. Sur.).

## DECIDUOUS FRUITS AND NUTS

CODLING MOTH (Laspeyresia pomonella) - NEW MEXICO - Average number per pheromone trap by county: Bernalillo 11.1, Grant 9, Los Alamos 1, Otero 25.3, Rio Arriba 2.2, Sandoval 9.2, San Juan 20.3, Santa Fe 9.5, and Valencia 20. (N.M. Coop. Rpt.). OREGON - Damage to unsprayed apples and pears in Jackson County much more severe than in previous years. Infestations of 90 percent common in unsprayed orchards. (Berry).

APPLE MAGGOT (Rhagoletis pomonella) - MASSACHUSETTS - Increased at all test areas in Amherst and Belchertown, Hampshire County, and Shelburne Falls, Franklin County, week ending August 22. (Drozdowski).

ROSY APPLE APHID (Dysaphis plantaginea) - SOUTH CAROLINA - Collected on apple trees in Kershaw County August 20, 1975. Collected and determined by D.R. Pollet. This is a new county record. (McCaskill).

PEARSLUG (Caliroa cerasi) - NEW MEXICO - Moderate on pears in Valencia and Bernalillo Counties. Heavy on ornamental plum in Valencia County. (N.M. Coop. Rpt.).

PECAN WEEVIL (Curculio caryae) - TEXAS - Light to moderate on pecans in San Angelo area, moderate to heavy in Rolling Plains. (McWhorter, Boring). OKLAHOMA - Moderate to heavy in Jefferson County. Moderate in Comanche County. Heavy adult emergence in Love County; up to 300 per tree. (Okla. Coop. Sur.).

WALNUT CATERPILLAR (Datana integerrima) - TEXAS - Heavy on pecans in Sterling County; light in eastern Uvalde area. (McWhorter, Stewart). OKLAHOMA - Heavy on pecan and other trees in northeast, east-central, and southeast areas. (Okla. Coop. Sur.). MISSOURI - Heavy on walnuts in southwest area. Many trees completely defoliated. (Munson).

WALNUT HUSK FLY (Rhagoletis completa) - OREGON - Emergence counts from traps at Dundee, Washington County, indicated second peak August 25. Some growers applied second spray. (Larson).

BLACK PECAN APHID (Tinocallis caryaefoliae) - TEXAS - Moderate to heavy on pecans in San Angelo area. (McWhorter). OKLAHOMA - Increased slowly, up to 7 per leaflet on pecan trees in Payne County. (Okla. Coop. Sur.).

## FOREST AND SHADE TREES

AN ARMORED SCALE (Fiorinia externa) - PENNSYLVANIA - Females and eggs collected on Tsuga caroliniana (Carolina hemlock) seedlings at Wellsville, York County, August 15, 1975, by W. Blosser. Determined by J.F. Stimmel. This is a new county record. (Kim).

NORTHERN PINE WEEVIL (Pissodes approximatus) - OHIO - Heavy damage by overwintering adults of this species and Hylobius pales (pales weevil) in east-central counties. Damage heavy on mature foliage of Scotch pine and light on seedlings week ending August 22. (Balderston).

SMALLER EUROPEAN ELM BARK BEETLE (Scolytus multistriatus) - OREGON - General adults and fresh emergence holes in trunk sections of dead elm at Union, Union County, August 27 indicated partial second generation occurs in this part of State. Most of current population in larval stages and will not pupate and emerge until spring 1976. (Penrose, Brown).

ELM LEAF BEETLE (Pyrrhalta luteola) - NEW MEXICO - Activity increased and range expanded; all stages present from southern county line to Alma, Catron County. (N.M. Coop. Rpt.). TEXAS - Moderate to heavy on shade trees in San Angelo area. (McWhorter). SOUTH CAROLINA - Collected on elm August 11, 1975, in Newberry County by H.L. Eason and in Chester County by D.C. Wylie. Determinations by D.K. Pollet. These are new county records. (McCaskill).

BRONZE BIRCH BORER (Agrilus anxius) - OREGON - Adult emergence holes in dead branches of Betula occidentalis (water birch) trees growing along Mountain Creek, 22.2 miles east of Mitchell, Wheeler County, August 15, 1975. Damaged wood observed by Westcott. Determination by R.L. Westcott. This is a new county record. (Westcott, Penrose).

MIMOSA WEBWORM (Homadaula anisocentra) - OKLAHOMA - Heavy on honeylocust in Payne and Tulsa Counties; light to moderate on mimosa in Garvin County. (Okla. Coop. Sur.).

TUPELO LEAFMINER (Antispila nysaefoliella) - OHIO - Larvae heavily damaged blackgum trees in Bay Village, Cleveland, Cuyahoga County, week of August 22. (Wells).

LOCUST TWIG BORER (Ecdytolopha insiticiana) - WEST VIRGINIA - Larval damage light to 5 acres of locust at Keyser, Mineral County, August 15, 1975. Collected by M. Park. Determined by A.R. Miller. This is a new county record. (Miller).

ORANGESTRIPED OAKWORM (Anisota senatoria) - NEW YORK - White oak defoliation heavy in Jefferson County. (Rockwell).

AN ARMORED SCALE (Diaspidiotus liquidambaris) - FLORIDA - Collected on Liquidambar styraciflua (sweetgum) in nursery at Wacissa, Hamilton County, by A.E. Graham August 6, 1975. Determined by G.W. Dekle. This is a new county record. (Fla. Coop. Sur.).

ELM LEAF APHID (Tinocallis ulmifolii) - CALIFORNIA - Very heavy, 100-200 per elm leaf, on street trees at Sacramento, Sacramento County. Honeydew covered street, sidewalk, and parked cars. (Cal. Coop. Rpt.).

**MAN AND ANIMALS**

SCREWWORM (Cochliomyia hominivorax) - Total of 1,207 cases reported from continental U.S. during August 10-23 as follows: Texas 1,111; New Mexico 39; Arizona 57. Total of 882 cases confirmed in portion of Barrier Zone in Republic of Mexico. Total of 452 cases reported in Mexico south of Barrier Zone, Number of sterile flies released this period totaled 397,225,800 as follows: Texas 348,094,800; New Mexico 11,025,000; Arizona 38,106,000. Total of 4,014,000 sterile flies released within Barrier of Mexico and 4,000,000 released south of Barrier. (Vet. Serv.).

FACE FLY (Musca autumnalis) - ARKANSAS - Collected on dairy cattle at Fort Smith, Sebastian County, August 24, 1975, and at Booneville, Logan County, August 27 by W.P. Boyer. Determined by E.P. Rouse. These are new county records. Results of survey indicate no movement into southwest area of State. (Boyer).

HORN FLY (Haematobia irritans) - TEXAS - Moderate to heavy on livestock in San Angelo and Rolling Plains areas. (McWhorter, Boring). OKLAHOMA - Ranged 400-600 per head on cattle in Payne County. Heavy in Garvin and Comanche Counties. (Okla. Coop. Sur.).

STABLE FLY (Stomoxys calcitrans) - OKLAHOMA - Averaged 5 per head on Payne County dairy cattle. (Okla. Coop. Sur.).

MOSQUITOES - ALABAMA - Culex pipiens quinquefasciatus and other species heavy for past 60 days statewide due to excessive rainfall. (McQueen). OHIO - Light trap catches at Worthington, Franklin County, averaged 14.5 adults per trap per night. Aedes trivittatus, A. triseriatus, A. vexans, Culex pipiens, and Anopheles punctipennis predominant. (Ohio Dept. Health). WISCONSIN - Increased due to recent rains. Humans severely annoyed in Chippewa County. Mosquito populations and biting should increase significantly next 14 days. (Wis. Ins. Sur.). MINNESOTA - Trap collections decreased, Aedes vexans and Culex tarsalis predominant. Bite collections decreased with A. vexans and A. stimulans predominant. Light to moderate brood present in breeding sites; treatments to prevent emergence underway. (Minn. Pest Rpt.).

AN ARGASID TICK (Ornithodoros coriaceus) - CALIFORNIA - About 40 resting or sleeping fire fighters bitten at Willow Greek, Mendocino National Forest, Mendocino County. Some fire fighters bitten 2-3 times; many hospitalized. (Cal. Coop. Rpt.).

**HOUSEHOLDS AND STRUCTURES**

EUROPEAN EARWIG (Forficula auricularia) - INDIANA - Heavy in mobile home park near South Bend, St. Joseph County. Collected by D.L. Matthew August 6, 1975. Determined by A. Provonsha. This is a new State record. Infestation believed established for period of time. (Matthew).

**STORED PRODUCTS**

GRANARY WEEVIL (Sitophilus granarius) - NORTH CAROLINA - All stages infested corn in flint stage over Coastal Plain. Adults 15-25 per ear in 8 fields in Duplin County. Corn harvest underway; many clean bins infested from field. (Hunt, Federonko).

**BENEFICIAL INSECTS**

A BRACONID WASP (Apanteles electrae) - NEW MEXICO - Collected from Hemileuca oliviae (range caterpillar) in Lincoln County by W.P. Stephens August 8, 1975. Determined by P.M. Marsh. This is a new State record and host record. (N.M. Coop. Rpt.).

LADY BEETLES (Hippodamia spp.) - MAINE - Larvae of H. tredecim-punctata tibialis (thirteen spotted lady beetle) and H. convergens (convergent lady beetle) very common in most cornfields with previous heavy Rhopalosiphum maidis (corn leaf aphid) populations. R. maidis decreased, light in various parts of corn plant and throughout ear on kernels in some cases. (Gall).

## FEDERAL AND STATE PLANT PROTECTION PROGRAMS

COMSTOCK MEALYBUG (Pseudococcus comstocki) - CALIFORNIA - Second generation almost completed at Porterville, Tulare County. Average male trap catches decreased from high of 587 to 27 compared with high of 922 in 1974 and 2,900 in 1973. This decrease due to release of 5 different parasites. Total of 221 males taken in 48 of 673 traps with 60 as highest catch for any trap at Lindsay. Commercial grove trapping indicates 21 of 28 previously infested groves still negative; other 7 groves closely associated with infested properties which could account for males. At Poplar, 15 infested properties noted on 9 blocks; entire area of 466 host plants on 1,592 properties on 121 blocks inspected at McFarland, Kern County. Total of 40 properties infested; 25 in city and 15 in buffer area around McFarland; 19 infestations treated and treatments planned for remaining infestations. Light infestations on 37 trees in 2-year-old almond orchard (36 acres) 2 miles south of McFarland, probably from infested backyard mulberry trees. First time commercial almonds found infested. (Cal. Coop. Rpt.).

GRASSHOPPERS - NEVADA - Adults of Camnula pellucida (98 percent) and Melanoplus sanguinipes and M. femurrubrum (2 percent) ranged 2-20 per square yard on 300+ acres of native meadow at Soldier Meadows, Humboldt County. Averaged 10 per square yard on about 200 acres. (Barclay, Bechtel). UTAH - Grasshoppers ranged 15-20 per square yard in Flat Valley and 10-15 in Jap Valley, Sanpete County. Scattered light to moderate in Washington County. Light to moderate scattered field and garden infestations in Davis County. (Stephens et al.). NORTH DAKOTA - During adult cropland survey, marginal averages per square yard by county: Dickey and Ransom 3, Richland 2, and La Moure 5. Field averages per square yard by county: Dickey, Ransom, and Richland 2, and La Moure and Sargent 3. Melanoplus bivittatus, M. sanguinipes, and M. femurrubrum dominant. (Winks, Scholl). MINNESOTA - Adult survey complete, populations decreased from 1974. Some scattered fields with 8 or more per square yard in northwest, west-central, and central districts. (Minn. Pest Rpt.).

GYPSY MOTH (Porthetria dispar) - CALIFORNIA - Trapping in Yosemite National Park continued due to single male moth trapped in pheromone trap in 1974 on valley floor. This season 48 traps in strategic locations. To date, all 290 trap inspections negative. (Cal. Coop. Rpt.).

JAPANESE BEETLE (Popillia japonica) - MAINE - Larvae extremely heavy in golf course at Portland, Cumberland County, week of August 25. Earlier adults moderately damaged foliage of various plants and trees. Materials for treatment lacking or scarce. (Gall).

ORIENTAL FRUIT FLY (Dacus dorsalis) - CALIFORNIA - One 10-day-old male collected from Steiner trap on orange tree at National City, San Diego County, by B. Wood September 2, 1975. Detected about 11.5 miles south of the epicenter of the 1974 infestation. Determined by T. Seeno; confirmed by M. Wasbauer. (PPQ).

PINK BOLLWORM (Pectinophora gosspyiella) - NEVADA - Five additional males collected in gossyplure traps in Pahrump Valley, Nye County. (Joy).

WHITEFRINGED BEETLES (Graphognathus spp.) - MISSISSIPPI - Averaged 2.3 per 25 sweeps in Lawrence County and 8.3 per 25 sweeps in Jefferson Davis County week ending August 22. (Smith).

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HAWAII INSECT REPORT

New State Record - Four specimens of a POMPILID WASP (Evagetes padrinus padrinus) collected from pit traps in sugarcane field at Ewa, Oahu, by A.K. Ota in March 1975. Determined by H.E. Evans. (Beardsley et al.).

General Vegetables - Larvae of LEEK MOTH (Acrolepia assectella) and BEET ARMYWORM (Spodoptera exigua) moderate to heavy in 2,000 square feet of green onions at Pearl City, Oahu, and in 100 square feet of same crop at Waikapa, Maui. At Pearl City, 80+ percent of plants infested, 100 percent infested at Waikapu. Damage light to moderate with 5-20 percent of leaves damaged. Light in backyard broccoli plantings at Pearl City. (Miyahira, Mau). SOUTHERN GREEN STINK BUG (Nezara viridula) adults and immatures moderately damaged 1,000 square feet of yardlong beans at Waikapu, Maui. At least 25 percent of bean pods damaged. About 75 percent parasitized by Trichopoda spp. (tachinid parasites). (Miyahira). CABBAGE WEBWORM (Hellula rogatalis) moderate to heavy in 0.5 acre of mustard cabbage at Pearl City. Larvae 1-4 in infested heads. At least 25 percent of plants infested. Damage severe, up to 40 percent of heads unmarketable. Light in small plantings of nearby daikon. GREENHOUSE WHITEFLY (Trialeurodes vaporariorum) adults and eggs heavy in backyard eggplant and tomato plantings at Pearl City. Infestation estimated at 20-35 adults per square inch of leaf surface; egg counts much higher. Immatures noted on older leaves in eggplant plots. (Mau).

Fruits and Ornamentals - BANANA SKIPPER (Erionota thrax) light in 0.125 acre of banana at Waikapu, Maui. Only 0.01 percent of trees infested compared with 0.20 percent at same location 3 months earlier. All sampled larvae parasitized by Apanteles erionotae (a braconid wasp) compared with 44.8 percent in July and 33 percent in June. (Miyahira). COFFEE BEAN WEEVIL (Araecerus fasciculatus) adults heavy in Maunaloa (Canavallia cathartica) seed pods at Kaupo, Maui. All mature seed pods infested. (Ah Sam).

**DETECTION**

New United States Record
A DELPHACID PLANTHOPPER (Nilaparvata wolcotti Muir and Gifford) - CALIFORNIA - Specimens collected from light trap at Micke Grove, San Joaquin County, by M. Croce July 24, 1974. Determined by J. P. Kramer. Previously known from Puerto Rico. Adults had been collected in Sacramento County by H.H. Keifer in 1933 and 1936. (Cal. Coop. Rpt.).

New State Records - A BRACONID WASP (Apanteles electrae) - NEW MEXICO - Lincoln County. (p. 746). EUROPEAN EARWIG (Forficula auricularia) - INDIANA - St. Joseph County. (p. 746). A POMPILID WASP (Evagetes padrinus padrinus) - HAWAII - Oahu Island. (p. 748).

New County Records
BLACK SWALLOWTAIL (Papilio polyxenes asterius) - SOUTH CAROLINA - Collected from yard in Sumter County by M. Culp August 14, 1975. Determined by R.P. Griffin. (McCaskill).

A ZORAPTERAN (Zorotypus hubbardi) - KENTUCKY - Collected in sawdust in Pike County by V. Johnson July 29, 1975. Determined by V. Johnson, confirmed by P.H. Freytag. (Barnett).

ARMORED SCALES - Diaspidiotus liquidambaris - FLORIDA - Hamilton (p. 745). Fiorinia externa - PENNSYLVANIA - York (p. 744). BRONZE BIRCH BORER (Agrilus anxius) OREGON - Wheeler (p. 745). ELM LEAF BEETLE (Pyrrhalta luteola) SOUTH CAROLINA - Newberry, Chester (p. 745). FACE FLY (Musca autumnalis) ARKANSAS - Sebastian, Logan (p. 746). LOCUST TWIG BORER (Ecdytolopha insiticiana) WEST VIRGINIA - Mineral (p. 745). NORTHERN CORN ROOTWORM (Diabrotica longicornis) WEST VIRGINIA - Wood, Jackson (p. 738). ROSY APPLE APHID (Dysaphis plantaginea) SOUTH CAROLINA - Kershaw (p. 744).

**CORRECTIONS**

CEIR 25(24):488 - "PEAR PSYLLA ... PENNSYLVANIA ..." should read "PEAR PSYLLA ... WASHINGTON ..."

CEIR 25(35):727 - FACE FLY (Musca autumnalis) - INDIANA - "... note should be under HORN FLY (Haematobia irritans) - INDIANA ..." (Meyer).

## LIGHT TRAP COLLECTIONS

| | Temperature °F. | Precipitation (inches) | Type of trap (BL = blacklight, I = incandescent, MV = mercury vapor, O = other) | Agrotis ipsilon (dingy cutworm) | Estigmene acrea (salt marsh caterpillar) | Euxoa auxiliaris (army cutworm) | Feltia subterranea (granulate cutworm) | Heliothis virescens (tobacco budworm) | Hyphantria cunea (fall webworm) | Laspeyresia molesta (codling moth) | Leucania unipuncta (armyworm) | Loxostege commixtalis (garden webworm) | Loxostege sticticalis (beet webworm) | Mamestra configurata (bertha armyworm) | Mamestra picta (zebra caterpillar) | Melanchra assimilis (spotted cutworm) | Ostrinia nubilalis (European corn borer) | Peridroma saucia (variegated cutworm) | Phlyctaenia ainsliei (alfalfa webworm) | Prodenia ornithogalli (yellowstriped armyworm) | Spodoptera exigua (beet armyworm) | Spodoptera frugiperda (fall armyworm) | Trichoplusia ni (cabbage looper) | Crops |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| COLORADO | | | | | | | | | | | | | | | | | | | | | | | | |
| Denver 8/15-22 | | | BL | | | | | | | | 700 | | | | | | | | | | | | | |
| FLORIDA | | | | | | | | | | | | | | | | | | | | | | | | |
| Gainesville 8/22-28 | | | BL | | | | 12 | 2 | 8 | | | | | | 2 | | | | 1 | 11 | 2 | | | |
| INDIANA (Districts) | | | | | | | | | | | | | | | | | | | | | | | | |
| South Central 8/16-22 | | | BL | 31 | 11 | | | | 9 | | | | | 1 | 8 | 13 | 46 | 232 | | | | | | |
| Southwest 8/16-22 | | | BL | 17 | 18 | | | | 2 | | | | | | 1 | 4 | 8 | 80 | | | | 2 | | |
| KANSAS | | | | | | | | | | | | | | | | | | | | | | | | |
| Garden City 8/20-21, 25, 27 | | | BL | 52 | | 3 | 3 | | 201 | | | | | | | 2 | 17 | 86 | | | 8 | | | |
| Rossville 8/28 | | | BL | 5 | | | | | 320 | | | | | | | 155 | 5 | 95 | | 5 | | | | |
| MINNESOTA | | | | | | | | | | | | | | | | | | | | | | | | |
| Lamberton 8/21-26 | | | BL | 1 | | | | | 90 | | | | | | | 1856 | 5 | 199 | | | | | | |
| Shakopee 8/21-26 | | | BL | | | | | | | | | | | | | 36 | | 64 | | | | | | |
| MISSISSIPPI | | | | | | | | | | | | | | | | | | | | | | | | |
| Stoneville 8/22-28 | 68-93 | 0.13 | 2BL | 17 | 3 | | 6 | 328 | 101 | | | | | | | | | 29 | 111 | 265 | 62 | 1632 | | |
| NEW JERSEY | | | | | | | | | | | | | | | | | | | | | | | | |
| Seabrook 8/20-26 | | | BL | 35 | | | | | 6 | | | 14 | | | 8 | 20 | | 129 | | 10 | | 8 | | |
| Vineland 8/20-26 | | | BL | 46 | | | | | 10 | | | | | | 7 | 11 | | 98 | | 14 | | 5 | | |
| NORTH DAKOTA | | | | | | | | | | | | | | | | | | | | | | | | |
| Bottineau 8/18, 21 | | | BL | | | | | | | | | | | | | | | 4 | | | | | | |
| Fargo 8/26 | | | BL | | | | | | | | | | | | | | | 8 | | | | | | |
| OHIO | | | | | | | | | | | | | | | | | | | | | | | | |
| Wooster 8/23-29 | | | BL | 36 | | | 20 | | 14 | | | | | | | 128 | 129 | 99 | | 180 | 43 | 9 | | |
| PENNSYLVANIA (Districts) | | | | | | | | | | | | | | | | | | | | | | | | |
| Central 8/19-27 | | | 7BL | 2 | | | | | 1 | 20 | | | | | | 40 | 7 | | | 8 | 4 | | | |
| South East 8/19-27 | | | 6BL | 2 | 1 | | | | | | | | | | | 10 | 2 | | | | 7 | | | |
| SOUTH DAKOTA | | | | | | | | | | | | | | | | | | | | | | | | |
| Brookings 8/18-22 | | | BL | | | | 2 | | | | | | | | | 215 | 43 | 72 | | | | 2 | | |

## LIGHT TRAP COLLECTIONS

| | Temperature °F. | Precipitation (inches) | Type of trap (BL = blacklight, F = fluorescent, MV = mercury vapor, O = other) | Agrotis ipsilon (black cutworm) | Estigmene acrea (salt marsh caterpillar) | Euxoa auxiliaris (army cutworm) | Faronta diffusa (dingy dart armyworm) | Feltia subterranea (granulate cutworm) | Heliothis virescens (tobacco budworm) | H. zea (bollworm, corn earworm, tomato fruitworm) | Laphygma frugiperda (fall armyworm) | Loxostege commixtalis (alfalfa webworm) | Loxostege sticticalis (beet webworm) | Mamestra configurata (tomato cutworm) | Mamestra picta (tobacco cutworm) | Ostrinia nubilalis (European corn borer) | Peridroma saucia (variegated cutworm) | Pseudaletia unipuncta (armyworm) | Spodoptera exigua (beet armyworm) | Spodoptera frugiperda (fall armyworm) | Spodoptera ornithogalli (yellowstriped armyworm) | Trichoplusia ni (cabbage looper) | Crops |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| VIRGINIA | | | | | | | | | | | | | | | | | | | | | | | |
| Blacksburg 8/22-28 | | | BL | 22 | | | | | 37 | | | | 1 | 10 | 3 | 11 | 24 | | 17 | 24 | | | |
| WISCONSIN | | | | | | | | | | | | | | | | | | | | | | | |
| Lancaster 8/21-27 | | | BL | 1 | | | | | 3 | | | | | | 11 | 5 | 2 | | | | | | |
| Mazomanie 8/21-27 | | | BL | 4 | | | | | 5 | | | | | | 94 | 3 | 16 | | 1 | | | | |

Weather of the week continued from page 734.

totals in central Missouri, central Illinois, and northwest Indiana scored the highest. In just a few hours 3-6 inches of rain fell near Kansas City. Extremely dry ground, however, kept flooding to a minimum. Later in the day, thunderstorms diminished but moving slowly eastward, a cold front gave rise to some good downpours along its length from the Great Lakes States into northern Texas. Other thundershower activity was scattered across the central Atlantic and gulf coasts.

The eastern Seaboard temperatures shot up rapidly on Tuesday and some records were broken--Richmond, Virginia, 99 degrees. At the same time, readings in the 70's and low 80's prevailed from the Great Lakes west into the northern Rockies. A cold front on Wednesday delivered steady general rains and cooler temperatures that continued throughout the week to the Pacific Northwest. Readings in the 50's and 60's settled along much of Pacific coast. It was even cooler, however, in parts of the north-central States where a high pressure area kept skies mostly clear and dropped early morning temperatures into the 50's and a few 40's. Central Iowa didn't welcome Wednesday's scattered but persistent rains. In less than 10 hours over 6 inches drenched Des Moines for its second wettest August on record. That's a sharp contrast to July, its driest ever with only 0.04 inches of rain. Thursday, showers gathered strength in the Midwest and from Oklahoma through the Upper Great Lakes in the Plains States. Precipitation broadened its coverage as the day progressed taking in areas from southern Texas northward through Arkansas, Missouri, Iowa, and into Lower Michigan. Locally heavy rains hit the western Great Lakes and thunderstorms covered the States bordering the Mississippi River. Friday's weather traced a pattern of thundershowers along the coasts from southern Texas through Florida to South Carolina. Triggered by a stationary front, another rainy area branched northeast from central Missouri and Iowa through the Great Lakes into western New England. Friday evening thunderstorm activity continued into early daylight hours Saturday. In Northeast and central sections, locally heavy thunderstorms dumped 1-2 inches of rain. Elsewhere, scattered thunderstorms lined the gulf coast and spread throughout the lower Mississippi Valley and parts of the south and mid-Atlantic Coast States. Readings in the 50's accompanied rains in northern New England on Saturday afternoon making it the coolest spot in the Nation. Temperatures in the 60's covered most of southern New England, northern Great Lakes and the Pacific Northwest. Around noon on Sunday, thunderstorms increased rapidly over the eastern United States from western New York and eastern Ohio to the south Atlantic and eastern gulf coasts. In south Texas, thunderstorms associated with tropical storm Caroline intensified. Four tornadoes swooped down in northwest Minnesota Sunday evening. One twister whirled a car off the road and caused two deaths.

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